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# Phonemic Awareness in Preschool Children in Relation to Reading Practices in the Home

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PHONEMIC AWARENESS IN PRESCHOOL CHILDREN IN RELATION TO  
READING PRACTICES IN THE HOME

A Thesis

Presented to

the Faculty of the Department of Psychology

Western Kentucky University

Bowling Green, KY

In Partial Fulfillment

of the Requirements for the Degree

Specialist of Education

by

Anna Hayes

December 2001

PHONEMIC AWARENESS IN PRESCHOOL CHILDREN IN RELATION TO  
READING PRACTICES IN THE HOME

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PHONEMIC AWARENESS IN PRESCHOOL CHILDREN IN RELATION TO  
READING PRACTICES IN THE HOME

Anna Hayes      December 2001      Pages 65

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Research suggests that phonemic awareness predicts later reading achievement and that children from low-SES families are "at-risk" for failing to develop phonemic awareness. Before children enter school, they spend the majority of their time with their caregivers. Therefore, activities that take place in the home are of importance when looking at what fosters development. The present study focused on children participating in two Head Start programs and on their families as well. The parents were interviewed to learn about the home activities, and the children were given a phonemic awareness assessment. The study found that the majority of parents reported participating in several literacy activities. However, a high number of children scored low on the phonemic awareness tests.

## Introduction

Reading is essential to success in the twenty-first century. Understanding the news, our jobs, following directions, and attending school requires that we know how to read. In the past, reading was not a primary focus until children entered school. Now, to help children get an early start with reading, it is recommended that we introduce pre-reading skills to children during the preschool years. Pre-reading skills include giving the child opportunities to observe adults reading and writing notes and becoming aware of safety signs in the environment (Teale & Sulzby, 1989).

Phonemic awareness is a cornerstone of today's research in the area of reading. Yopp and Yopp (2000) note that phonemic awareness is learning to recognize that the speech stream consists of a sequence of sounds, or phonemes, and then developing the ability to manipulate those sounds. For example, a phoneme determines the difference between "hog" and "dog." Individuals who are aware of phonemes understand that words are made up of these small sounds. Phonemic



awareness has been shown to be one of the best predictors of future reading development among children (Chaney, 1998; Spector, 1995; Whitehurst & Lonigan, 1998).

Children spend most of their time at home prior to beginning school. The emergent literacy skills that they develop as foundations for learning to read and their reading experiences, therefore, become the responsibility of the caregiver(s).

Adams, Foorman, Lundbert, and Beeler (1998) suggest that children's phonemic awareness level at the beginning of school is the single strongest determinant of the success that they will experience when learning to read or of the likelihood that they will fail. Adams et al. (1998) added that the child's ability to manipulate phonemes strongly correlate with his/her reading success through the 12<sup>th</sup> grade. They further added that children need to understand phonemes because that will allow them to understand how the alphabet works. This understanding of the alphabet is essential to learning to read. It is important to note that children of low socioeconomic status (SES) often lack the phonemic awareness skills and understanding of the alphabet necessary to become successful readers (Adams et al., 1998). Therefore, finding ways to overcome this lack of skills and help low

SES children be successful in developing phonemic awareness becomes crucial.

The present study focuses on what caregivers are doing in the home environment to increase their children's phonemic awareness. In the present study, the phonemic awareness level of each child will be assessed and correlated with the activities that take place in the home environment. As a result, these activities associated with increased phonemic awareness levels in children can be identified. These home activities could then be used to educate other parents regarding techniques useful for increasing phonemic awareness levels in their children. Providing parents with crucial training activities will help their children get a head start on reading when they enter school.

## Literature Review

### What is Emergent Literacy?

Emergent literacy is used to describe the idea that literacy is best conceptualized as a developmental continuum beginning early in life, rather than all at once when the child begins school. Also, emergent literacy is the term used to represent the importance of social interactions in literacy-rich environments for prereaders (Whitehurst & Lonigan, 1998). Emergent literacy is a combination of language, writing, linguistic awareness, and print concepts (Whitehurst et al., 1994).

Emergent literacy is one component of metalinguistic awareness. Metalinguistic awareness is the ability to think explicitly about the structure of language, such as phonemes, and to focus on this structure separate from the meanings of the word (Chaney, 1994).

### What is Phonemic Awareness?

Phonemic awareness is a part of the metalinguistic skills that are hierarchically developed. Developmentally, children initially become aware of words and syllables. Next, children around the age of three

develop awareness that sentences are composed of words. Then, children develop an awareness of phonemes (Snider, 1995). Phonemic awareness has been conceptualized in a number of ways. For the present study, Adams' (1990) view will be discussed. Adams described her view of the levels that make up phonemic awareness. She stated that phonemic awareness is comprised of five levels. First, there is an appreciation of sounds in spoken language. Second, there is the ability to compare and contrast sounds in words. Third, there is the ability to blend and split syllables. Fourth, there is the development of the ability to separate individual sounds in the syllables. Finally, there is the ability to manipulate phonemes and combine new words. When beginning school, children should be aware of the letter sounds. Children who begin school with little or no phonemic awareness will lack the ability to acquire that alphabetic principle which in turn will limit their ability to decode words. This inability to decode words will limit reading success (Snider, 1995).

An important component in learning to read is phonemic awareness. Adams et al. (1998) suggest that all children must be aware of the phonemes that make up a word in order to read. A phoneme is the sound of letters in words. A phoneme is the smallest unit of sound that

makes a difference in communication (Mercer & Mercer, 2001). The awareness that words are made up of these sounds is termed phonemic awareness. Phonemic awareness may be confused with phonological awareness.

Phonological awareness is the ability to perceive that spoken words include a series of individual sounds. Phonemic awareness differs from phonological awareness in that phonemic awareness applies to the relationship between sounds (phonemes) and print (Mercer & Mercer, 2001).

#### Why Phonemic Awareness is Important

The reason that phonemic awareness has become so predominant in the literature is attributed to its being one of the best predictors of later reading achievement (Adams et al., 1998; Ball & Blachman, 1991; Elkonin, 1963; 1973; MacDonald & Cornwall, 1995; Snider, 1997; Zhurova, 1963). In order to be successful in reading, developing readers must learn to separate these sounds, one from another, and put them into categories that permit understanding of how words are spelled (Adams et al., 1998). Children must be able to associate sounds with letters and manipulate the sounds to blend or segment words (Blevins, 1997). When beginning school, children sometimes have a difficulty with phonics instruction because they have not developed the

prerequisite phonemic awareness skills. Phonics instruction deals with the sound-spelling relationship and is associated with printed words. Therefore, phonemic awareness is important because without it phonics instruction will not be effective (Blevins, 1997).

Adams et al. (1998) explained that phonemic awareness is not easy to establish. Part of this difficulty stems from the sound of any given phoneme can vary considerably from word to word or speaker to speaker. Also, phonemes are not spoken as separate units; they are co-articulated, meaning we fuse the phonemes together. For example, when we say "bark," we don't say /b/, /a/, /r/, /k/, we say, /b/, /ar/, /k/.

To describe the importance of phonemic awareness, several studies will be reviewed. These studies were reviewed because they looked at the relationship between phonemic awareness and later reading achievement. Snider (1997) assessed the relationship between phonemic awareness skills in kindergarten and reading achievement at the end of the second grade using five tasks: rhyme, sound oddity tasks, blending tasks, phoneme segmentation, and phoneme manipulation. There were 73 students (36 boys and 37 girls) with a mean age of 6 years, 6 months who participated in the study. The original study was

designed to answer two questions: (a) What is the relative predictive power of different types of phonemic awareness tasks? (b) Is the statistical correlation between phonemic awareness and reading achievement also of practical significance?

The phonemic awareness test given by Snider (1997) during kindergarten was composed of five subtests with 10 items each. At the end of second grade, two subtests from the Iowa Test of Basic Skills (ITBS) were given to measure Word Analysis and Reading Comprehension. When comparing the obtained means and standard deviations for the tasks, Snider (1997) found a hierarchy of phonemic awareness. The rhyming and sound oddity tasks were found to be easier than the phoneme deletion and manipulation tasks during kindergarten.

Snider (1997) also found that phonemic awareness predicted later reading achievement and suggested that phonemic awareness screening tools could be useful for identifying children who are at-risk for poor achievement in reading. Snider (1997) suggested that the practical significance was less straightforward than the predictive power. For example, the high-performing and average students had different patterns of scores than of low-performing students. After conducting a series of stepwise regressions, Snider found that phoneme

manipulation tasks (Substitute Initial Consonant and Strip Initial Consonant) and phonemic segmentation tasks, along with the total test score, were the better predictors of later reading achievement.

A follow-up study was conducted by Snider (1997) at the end of the 2<sup>nd</sup> grade. Twelve of the original 18 students who scored in the lowest quartile were retested with the Test of Phonological Awareness (Torgesen & Bryant, 1994), along with a third grade passage from the Gray Oral Reading Inventory (Wierderholt & Bryant, 1992). Also, individual structured interviews were conducted asking about favorite subjects, if they liked or disliked school, and their reading habits.

Snider (1997) found that students scored higher on the five phonemic awareness tasks than they had in kindergarten. The students understood what to do and answered without hesitation. Six students were reading with accuracy on grade level, but three of these six students read at a fluent rate. Five students who had been labeled as having a learning disability did not read on grade level. The performance on the phonemic segmentation and manipulation tasks showed significant improvement, but the performance on the rhyming task did not show improvement. However, it was noted that there may have been problems within the test; therefore, the



results of the rhyming task may have been affected because the children knew how to complete the tasks, presumably making the task easier. Another explanation given was that complex language usage made the task more difficult. Whatever the reason for the results on the rhyming task, Snider (1997) did not find this task highly reliable in predicting future reading success. This study further adds support for the importance of phonemic awareness when predicting future reading performance.

Ball and Blachman (1991) assessed the effectiveness of phonemic awareness training on kindergarten students' early word recognition. Ninety kindergarten students were divided into three groups. Group 1 received training in phoneme segmentation and the correspondence between letter names and letter sounds. Group 2 received training in letter names and letter sounds only. Group 3 received no training. Group 1, who received phonemic awareness instruction, along with correspondence between letter names and letter sounds, significantly improved in early reading and spelling skills. Groups 2 and 3 made improvement, but not as extensive as Group 1. The results demonstrate that phonemic awareness instruction helps children improve in reading and spelling.

MacDonald and Cornwall (1995) conducted an eleven-year follow-up study on 24 students who had participated

in a study on phonological analysis and reading and spelling abilities while in kindergarten. In the original study, 58 kindergarten students were chosen at random from schools within one city. The students were given the following measures: Auditory Analysis Test (Rosner & Simon, 1971), the Peabody Picture Vocabulary Test - Revised (Dunn & Dunn, 1981), and the Reading and Spelling subtests of the Wide Range Achievement Test (Jastak & Wilkinson, 1984).

In the follow-up study, MacDonald and Cornwall (1995) found 24 of the original 58 participants in the follow-up study. They administered the same tools as before and also administered the Word Attack subtest and the Passage Comprehension subtest from the Woodcock Reading Mastery Tests - Revised (Woodcock, 1987). The results indicated that the level of phonological awareness, or a broader awareness of the sound structures, including phonemic awareness, during kindergarten was a significant predictor of later word identification and spelling skills.

Stanovich (1986) reported, from a review of research, that phonemic awareness skills were a more powerful predictor of reading achievement than were measures of nonverbal intelligence, vocabulary, and listening comprehension. Also, phonemic awareness

measures correlate more highly with reading acquisition than do tests of general intelligence or reading readiness.

In summary, the previously cited research studies suggest that phonemic awareness is important because it is a predictor of later word identification, spelling, and reading achievement. Students who received instruction in phonemic awareness improved their reading and spelling abilities. Educators should especially focus on low SES children who typically need the extra help in developing phonemic awareness.

#### Socio-Economic Status

The following studies were chosen for review because they look at the differences between middle SES and low SES and how the SES levels affects phonemic awareness. The home environment and parental involvement are factors that have been associated with children's level of phonemic awareness. Comparisons have been made between children from low and middle socioeconomic families. Epstein (1995) found that children from low SES families have poorer phonemic awareness. Low SES families have fewer books; parents talk less with their children; and read to them less than do middle and high-SES families (Chaney, 1994).

There has been considerable research concerning the levels of phonemic awareness present in preschool children and the relationship with SES. Ninio (1980) found that mothers from low SES families had fewer teaching interactions with their children. Snow (1983) found that middle SES families use stories with more complex language forms and use conversations with their children to build a stronger reading bond. The complex language forms and conversations were not present in low SES families, and these children were found to be less efficient in reading.

Raz and Bryant (1990) suggested that low SES children learn to read slower because they have less opportunity to develop sensitivity to phonological segments. They conducted a study, involving 80 children. They divided the children into two groups of 40 children. The first group had children with a mean age of 4 years, 6 months and was the low SES group. The second group had a mean age of 5 years, 6 months and consisted of middle SES children. This study was conducted to answer five questions. First, are there differences between low SES and middle SES children's level of phonological awareness? Second, do the tests of phonological awareness predict reading? Third, are there differences between the two groups in reading even after IQ level is

controlled? Fourth, are there SES differences in reading even after controls for differences in phonological awareness? Fifth, what are the reasons for the difference in the two SES groups' phonological awareness?

To answer the research questions, Raz and Bryant (1990) assessed children's performance on phonological awareness tasks and tests of reading in two tasks on two separate sessions. The first task was a measurement of isolating phonemes. It was administered during the first session. The experimenter said nine single syllable words, each beginning with a single consonant, and the child was instructed to say how the word started. The second task was a rhyme measure. It was administered during the second session. The experimenter said four words; all but one rhymed. To assess reading, three standardized reading tests were given.

Raz and Bryant's (1990) research yielded the following results. First, in answering the question of differences in SES groups, an overall significant difference was found for both the phoneme isolation and the rhyming tasks. Specifically, middle SES children scores higher on phonological awareness tasks. Second, it was found that there was a reliable predictive relationship between the phonological measures used and reading abilities. Third, levels of IQ could not explain

the difference in reading levels between the low SES and middle SES children. Fourth, phonological skills make a considerable contribution to the difference between the two groups, but may not explain the difference in its entirety. Fifth, it was projected that preschool experiences played a role in the difference between middle SES and low SES scores. However, the results of this study did not support this hypothesis because the difference in phonological awareness emerged only after the children went to school.

Children from low SES families are at risk for reading difficulties. Low SES families own fewer books, and less reading occurs in the home. McCormick and Mason (1986) found that 47% of the low-income parents in their study reported no alphabet books in the home. In comparison, only 3% of middle SES families reported the absence of books. Raz and Bryant (1990) also noted that middle SES families had a greater variety of books in the home. Adams (1990) estimated that the representative middle-class child enters first grade with 1,000 to 1,700 hours of one-on-one picture book reading, whereas a child from a low-income family averages only 25 hours.

Hakes (1982) reported that in lower SES homes, there is a lack of reading materials and bedtime stories. Having reading materials is common in middle-class

families. Children are much more likely to develop metalinguistic competence if they grow up in a literate environment with adult models. Lower SES children lack the skills from which language awareness develops. Lower SES children also have lower metalinguistic skills, such as phoneme segmentation.

Warren-Leubecker and Carter (1988) compared a low SES group of 56 children with a middle SES group of 32 children. They assessed the children's receptive vocabulary and metalinguistic skills, including phonemic awareness. Phonemic awareness was lower for low SES children. Low SES children scored significantly lower in many basic skills, such as vocabulary, sound-letter matching, and beginning skills. These skills are necessary for reading achievement. By the end of first grade, lower SES children differed from middle SES in phonemic awareness. This difference may be the key to the reading differences among these two groups.

In summary, children from lower SES families have fewer books, parents who talk less with their children, and parents who read less to their children. Also, mothers from low SES families had fewer teaching interactions with their children. Low SES families average only 25 hours of one-on-one picture reading time, whereas, middle SES families average 1,000 to 1,700 hours

upon entering school. Phonemic awareness levels were shown to be less in children from low SES families.

### Home Environment

The following studies illustrate the activities that take place in the home environment. Smith and Dixon (1995) developed a questionnaire to assess reading materials in the home. A major difference between the low SES and middle SES children was the types of reading material available for the children in their homes. Low SES homes had only adult level material. There were no areas in the home where the children could read, draw, or write. Also, when reading to their children, only 30% said that the children interrupted and asked questions about the material (Smith & Dixon, 1995).

In addition to assessing the amount of reading materials, Smith and Dixon (1995) also assessed parent involvement with their children's literacy experiences with a parent questionnaire. The results showed significant differences between the experiences of lower-SES and middle SES families. Seventy-four percent of the middle SES parents reported reading to their children on a daily basis. In comparison, 74% of low SES parents read to their children once per week. Thirty-nine percent of the low SES parents answered "seldom" or



"occasionally" in describing how often they read to their children. When the low SES parents did read, they reported reading a lesser amount of time than did the middle SES families. Overall, the majority of the low SES children were read to less than 10 minutes per week before entering preschool.

Chaney (1998) conducted a four-year longitudinal study of a group of preschool children as they began to read. These children were first assessed at three years of age. Their linguistic proficiency, metalinguistic skills (including phonemic awareness), and print awareness were measured. An interview was also conducted with the parent to measure the family involvement.

A second assessment battery was conducted when these children reached the age of seven. There were two tests administered to measure phonological awareness and three tests to measure reading achievement. After these tests were administered, Chaney (1998) examined the relationship between the scores on the tests given at three and the levels of reading achievement at age seven. The social variables (income, family literacy practices) were also assessed.

There were three main results from this study. First, there was an indirect relationship between family literacy involvement and future reading achievement.

Children whose families are highly involved in literacy may have increased opportunities for the development of language and print concepts, which affect the development of reading skills. Second, language development accounted for a significant proportion of the variance in the children's reading ability following first grade. Third, metalinguistic skills and print awareness were found to make significant contributions to literacy. Because metalinguistic skills and print awareness increase reading ability, it is important to understand that phonemic awareness needs to be taught in preschool and kindergarten classrooms (Chaney, 1998).

Epstein (1995) conducted a study with 167 children from four Head Start centers in Suffolk, Long Island. The group of children had a mean age of 4 years, 5 months and 46% were Caucasian, 45% African-American, 8% Latino, and 1% Asian. Epstein (1994) found that children from low SES families enter school with fewer literacy skills. This finding was attributed to the home environment. It was found that low SES mothers had less effective communication skills with their preschool children. For example, low SES mothers asked fewer "what" questions, which require a verbal response, and more "where" questions, which require only a response gesture. In comparison, children from high SES families had a larger

productive vocabulary. It was also found that low SES mothers were not as skilled at asking questions and interacting with their children in a way that their speech would meet the needs and capabilities of their infants.

Raz and Bryant (1990) also assessed the effects of environmental factors, such as the amount of time parents spent with their child in phonemic awareness activities. These activities included how often the parents recited rhymes, verses or poems to the children, and how often they played action rhyming games with the children. How many times the parents read to the children, how many times the parents told stories to the children, and how often the children read or looked at books on their own were also assessed. Raz and Bryant only found a difference in phonological awareness in older children. Therefore, they hypothesized that the higher phonemic awareness levels were more related to experiences at school than at home. The results of the questionnaire by Raz and Bryant yielded evidence that school experiences were a major factor, but home experiences such as the amount of time parents spend reading to their children had made a notable difference in the levels of reading.

Much research has been conducted on the effects of the home environment on reading skills in middle-class

families. Fewer research studies have been conducted with lower-income families, but there have been studies designed to establish a reason for the lower skills exhibited by children from low SES families. Nespeca (1995) interviewed nine parents of urban Head Start children to learn how the home environment is structured for reading. For comparison purposes, Nespeca used research conducted on middle SES families and their literacy experiences. Two questions were researched. First, what do low SES families do to help establish necessary reading skills? Second, what role does the public library play in low SES families? It was found that there was a great difference between the middle and low SES families in several ways. First, parents in the low SES families read less to their children. Of the nine mothers interviewed, eight rarely engaged in oral discourses with their child about the books that they were reading. Questions asked by parents were also asked differently by parents of low SES families. For example, mothers from middle SES families asked questions similar to the way a teacher would ask questions, with the intent to determine whether the child understood the material or remembered what was read.

In summary, children from low SES families have fewer literacy experiences. The lack of such experiences

hinders these children in developing phonemic awareness skill in comparison to middle SES children. Low SES families typically have only adult level material available for reading, and there were no areas set aside for the children to read, draw, or write. Children in low SES families were read to weekly as opposed to daily in middle SES families.

### Pre-school Experiences

The following studies discuss the importance of reading activities in the preschool years of children. Lesiak (1997) suggested that activities that increase phonemic awareness should be taught in our preschool classrooms. The environment needs to be structured in a way that will increase learning. The room should be organized so that the education is placed around the physical, cognitive, and social development of the child. Also, the child's needs, interests, and learning style should be met. There should be a hands-on approach that is developmentally appropriate for each child. Traditional, formal activities, such as worksheets and reading instruction typical of first grade, are inappropriate. The environment should be rich with print. Books, magazines, and a writing center increase exposure to reading materials. When reading is a part of everyday activities, phonemic awareness will increase.

To increase phonemic awareness, children need to be involved in a language-rich environment where they can experiment with sound. Nursery rhymes, jump rope chants, handclapping rhymes, and word play games increase their knowledge of sounds in the environment. When reading nursery rhymes the child could be allowed to fill in the rhyming word. Rhymes with the child's name are also important in helping to develop phonemic awareness. Games that include identifying the word that does not belong or sound deletion are also helpful techniques. Also, reading poetry and calling attention to the rhyme, alliteration, meter, or assonance is important in helping children understand words and sentences (Durica, 1998; Jerger, 1996).

Research shows that children who have fewer reading experiences during the preschool years will have poorer reading skills in the future. Scarborough, Dobrich, and Hager (1991) found that second grade students who were poor readers had less frequent preschool literacy experiences. They had less book activities, were read to less, and had parents who did less reading.

A study conducted by Smith and Dixon (1995) addressed the concern of children from low SES families entering school without the necessary skills to be

academically successful. Smith and Dixon (1995) compared the early literacy knowledge of 4-year-olds in low and middle SES families. Children were selected from three Head Start preschools to represent the low SES families. The middle SES children were selected from tuition-paid preschools. Four tasks were given to measure the children's understanding of function of print: (a) recognizing environmental print, (b) identifying literacy artifacts, (c) describing the functions of literacy print, and (d) recognizing readable print. Children's knowledge of the form and structure of print was also assessed by giving five tasks: (a) identifying letter names, (b) identifying letter sounds, (c) writing dictated words and phrases, (d) blending syllables into words, and (e) blending phonemes into words.

In measuring the knowledge of the function of print, the total scores ranged from 12 to 31, with 61% of the lower-SES children falling below the median (22). Only 30% of the children scored above the median from the low SES group. In measuring the knowledge of the form and structure of print, the overall scores ranged from 7 to 77 with 61% of the low SES children falling below the median (23). The results suggest that children from low SES families are not developing the skills that are needed to enter school (Smith & Dixon, 1995).

Experiences that children receive in classrooms should be focused around activities that will foster phonemic awareness. The children should be involved in language-rich activities where they become familiarized with sound. Children who do not receive the necessary skills before entering school will likely have difficulty with academic success, particularly reading.

### Purpose

Phonemic awareness is an important step for children to reach in order to be successful at reading. Research suggests that children with high levels of phonemic awareness are more successful at reading in later school years (Adams et al., 1998; Ball & Blachman, 1991; Chaney, 1998; Elkonin, 1963; 1973; MacDonald & Cornwall, 1995; Spector, 1995; Whitehurst & Lonigan, 1998; Zhurova, 1963). The studies reviewed have shown that children from low SES families are at risk of failing to read (Chaney, 1994; Epstein, 1997; Hakes, 1982; McCormick & Mason, 1986; Ninio, 1980; Raz & Bryant, 1990; Warren-Leubecker & Carter, 1988).

According to Chaney (1998), there have been few studies focusing on children younger than kindergarten age. These kinds of studies are important for assessing later reading achievement (Chaney, 1998). Phonemic awareness must be assessed at the preschool level so



interventions can help at-risk children. The present study focuses on the phonemic awareness levels of preschool children in relation to the emergent literacy activities that take place in their homes. As a result, the relationship between the type of activities and experiences that are being provided for the children and their level of phonemic awareness can be examined. Such research may lead to the design of interventions to foster the development of phonemic awareness.

Research suggests that to find an accurate correlation between literacy experience and reading skills, one must look at the different domains of emergent literacy, such as phonemic awareness, understanding language, and knowledge of letters (Whitehurst & Lonigan, 1998). The present study assesses phonemic awareness skills that are necessary to become successful at reading and how emergent literacy practices are fostered in the home environment. Determining helpful home environment activities that are related to phonemic awareness skills will enable researchers to focus on early interventions that will increase phonemic awareness in low SES or at-risk children.

Prior research has found that the home environment and pre-school experiences affect phonemic awareness levels. The present study focused on the relationship

between literacy activities in the home environment and the phonemic awareness levels of preschool children. The null hypothesis was that there would not be a relationship between the activities that take place in the home and the children's phonemic awareness levels.

## Method

### Subjects

Twenty-one children (13 males, 8 females) with a mean age of 4 years, 11 months enrolled in two Head Start classrooms were participants in this study. All children were at least 4 years of age as of October 1<sup>st</sup>. All of the children were Caucasian. Nine (43%) of the children met the eligibility requirements for a developmental delay in communication and received speech services during the school day. The remaining 12 (57%) met the income guidelines mandated by federal regulations. For example, a family of two must have an income amount of \$11,250 or less. A family of four must have an income amount of \$17,050 or less. For the caregiver interview, there were 21 parents, consisting of 19 mothers and 2 fathers. All parents lived in the home with the children and were Caucasian.

The Head Start classroom in Bullitt County, Kentucky had a total of 28 children enrolled. Of these 28 children, 21 were four-year-olds. All four-year-olds were asked to participate. Nine (43%) of the four-year-olds participated in this study. The Head Start center in

Trimble County had a total of 83 students with 49 four-year-olds. All of the four-year-olds were asked to participate. Twelve (24%) of the four-year-olds participated in this study.

The two Head Start classrooms followed two different curriculums. The Head Start classroom in Bullitt County followed preschool standards developed by the county. There were standards developed for mathematics, science, social studies, and language arts. For the current study, the language arts standards were of primary importance. The language arts standards included teaching activities such as children identifying their name, identifying colors, discriminating between letters, numbers, and shapes, and being able to tell if two symbols were different. Also, the children were taught to tell a story about a picture using complete sentences. Being able to listen to, tell, and talk about rhymes, nursery rhymes, and stories was regarded as important in the curriculum. Children were taught how to recite a rhyme with a group, to talk about a nursery rhyme or story, and be able to name objects in pictures, the environment, and books. The children were also taught how to answer questions about nursery rhymes and stories.

The Head Start center in Trimble County followed developmentally appropriate practices from the National

Association for the Education of Young Children (NAEYC) and Council for Exceptional Children. The lessons were divided into units covering topics such as "Getting Acquainted," "It's Me, I'm Special," "Safety," "Nursery Rhymes," "Music, Music, Music," and "Communication." Each unit used puzzles, books, music, nursery rhymes, and other activities (i.e., listening activities and using puppets).

### Materials

Most norm-referenced phonemic awareness instruments are designed for kindergarten and early elementary age children. Because the present study includes preschool children, assessment activities that are more age appropriate were chosen. Therefore, three phonemic awareness assessment tasks consisting of Detecting Rhymes, Counting Syllables (Adams et al., 1998), and Onset Fluency (Kaminski & Good, 1998) were administered to the children. These assessment tasks were validated as useful for four-year-olds in a study conducted by Bradbury (2001) who provided a phonemic awareness intervention program for Head Start children. There were no psychometric data available on the technical characteristics of these tests.

For the Detecting Rhymes test, the children were asked to name each picture on the left hand side of the

paper and point to picture that "sounded the same" on the right side of the paper. For the Counting Syllables test, the children were asked to clap as they broke down the word into syllables. On the Onset Fluency test, there were four sets of pictures presented to the children. The children were asked to point to pictures that began with the same sound presented to them by the examiner. There was also one question in each set of pictures that asked the child to tell the beginning sound of a word (picture).

Adams et al. (1998) estimated that scores of 3 to 5 on the Rhyming test or Counting Syllables test were average scores. Scores of 0 to 2 were viewed as serious. Adams et al. (1998) suggested that if the average score for a group of children was less than 3, the curriculum focusing on those skills should be revisited and the children may benefit from one-on-one assistance. Kaminski and Good (1998) did not offer any guidelines for interpretation of the scores on the Onset Fluency test because there were no norms for the scores.

An interview, adapted from Smith and Dixon (1995), was conducted with the caregiver to assess the home environment. The questions on the Smith and Dixon (1995) interview that were not related to reading were deleted for the purposes of the present study. The interview

consisted of questions targeting the amount of time spent reading, reading materials in the home, and the interaction between caregiver and child (Appendix A).

#### Procedure

Approval for this project was received from the Western Kentucky University Human Subjects Review Board before any data collection was attempted (Appendix B). Parent permission was obtained prior to the assessment or interview. A letter was sent home explaining the process along with a permission form for the parent to sign and return to the school (Appendix C). An attachment to the parent letter gave the caregiver a way of indicating the most convenient time and manner (e.g., in person or by telephone) to conduct the interview. When parents returned the permission form, the phonemic awareness assessment was administered.

In the course of one school day, those children in the Bullitt County Head Start program who volunteered to participate were given the phonemic awareness assessment battery. The children in the Trimble County Head Start Program were assessed on a different day. The children were assessed individually in their classroom. The administration time averaged six minutes. The Rhyming task was administered first. Next, the Counting Syllables task was administered. Last, the Onset Fluency task was

given. At the time of testing, the child was assigned a code that was used for all future references.

Of the 21 parents interviewed, 19 were mothers and 2 were fathers. Three parents requested that the interview take place in person at the Head Start classroom. The remaining 18 parents requested that the interview take place per phone conference. The interview administration time was 15 minutes. Parents were assigned the same code as their child. The researcher of the present study conducted the interview. The researcher was a school psychologist intern who had completed two years of graduate level course work. All of the questions, excluding those for yes or no answers, were presented in open-ended form. If a parent could not give an answer, then choices were given by the researcher.



## Results

Before the analyses were conducted, a frequency table was developed to remove any errors that may have been committed during the input of data. Table 1 provides the phonemic awareness raw scores for each child from each Head Start program. To determine if the children enrolled in the two programs had different mean scores, a two-tailed t-test was conducted to test for significance. There was no significant difference between the two groups on the total phonemic awareness score [ $t = 1.55$ ;  $df = 19$ ;  $p > .05$ ].

As can be seen from Table 1, only one child (5%) obtained a score of 3 or above on the Rhyming test. On the Counting Syllables test, 8 children (38%) scored 3 or above, while 13 children (62%) scored 2 or below. Sixteen points are possible on the Onset Fluency test. When an arbitrary cutoff score of one-half the total possible points was used, 5 children (24%) obtained a score of 9 or above on the Onset Fluency test and the remaining 16 children (76%) scored 8 or below.

Table 1

Phonemic Awareness Raw Test Scores


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<u>Bullitt County</u>				
<u>Child</u>	<u>Total</u>	<u>Rhyming</u>	<u>Syllables</u>	<u>Fluency</u>
B1	11	1	2	8
B2	7	0	2	5
B3	10	1	3	6
B4	14	1	2	6
B5	5	1	2	2
B6	9	1	2	6
B7	2	0	0	2
B8	7	1	3	3
B9	12	1	2	9
Mean (SD)	8.6 (3.5)	0.8 (.4)	2.0 (.8)	5.2 (2.4)
<u>Trimble County</u>				
<u>Child</u>	<u>Total</u>	<u>Rhyming</u>	<u>Syllables</u>	<u>Fluency</u>
T1	14	1	3	10
T2	10	1	3	10
T3	11	1	2	8
T4	16	3	5	8
T5	20	2	3	15
T6	5	1	1	3
T7	11	0	3	8
T8	7	1	2	4
T9	9	1	2	6
T10	9	0	1	8
T11	10	0	3	7
T12	14	2	2	10
Mean (SD)	11.3 (5.7)	1.1 (.9)	2.5 (1.0)	8.1 (3.0)

---

Note. No significant difference was found between the two groups.

Table 2 provides data on how often parents read to their children, how long the reading experience lasted, how often the children independently looked through

Table 2

Frequency and Duration of Time Spent in Reading Activities.

<u>Frequency</u>					
	<u>Daily</u>	<u>Weekly</u>	<u>Occasion</u>	<u>Sometimes</u>	<u>Never</u>
Parent/child	62%	38%	0	0	0
Child alone	76%	19%	5%	0	0
 <u>Duration (in minutes)</u>					
	<u>1-10</u>	<u>11-20</u>	<u>21 -30</u>	<u>&gt;30</u>	
Parent/child	5%	43%	19%	33%	
Child alone	24%	38%	24%	14%	

reading materials, and how long the children looked through these materials. Most parents reported that they read to their children daily. It was also reported that the majority of the children independently looked through reading materials on a daily basis. When asked about the duration of reading sessions, most parents reported that they read to their child 11-20 minutes.

The activities that parents participated in during reading are reported in Table 3. Most parents reported that their child sits beside them when a book is being read. All but one parent reported that their child chooses the reading materials. The majority of parents

Table 3

Parent Activities During Reading


---

<u>Seating arrangement</u>	<u>Frequency</u>	<u>Percent</u>
Child sits beside parent	14	67%
Child sits across from parent	2	10%
Child sits in parent's lap	5	24%
<u>Holding the book</u>		
Child holds the book	7	33%
Parent holds the book	13	62%
Parent holds book and child flips pages	1	5%
<u>Choosing the book</u>		
Parent chooses reading material	1	5%
Child chooses reading material	20	95%
<u>Reading style</u>		
Parent stops reading and asks questions	15	71%
Parent reads continuously without stopping	6	29%

---

reported that they hold the book while reading to their child. Most parents reported that while reading, they stop and ask questions about the material.

Experiences that took place during reading, such as pointing out letters, words, or pictures, were reported by the parents and are listed in Table 4. Interestingly, most of the parents reported that they stop reading

Table 4

Experiences that Occur During Reading Activities

<u>Activity</u>	<u>Yes</u>	<u>No</u>
Stop frequently and point out objects	91%	9%
Stop reading and point out letters	67%	33%
Stop reading and point out pictures	91%	9%
Read story without interruptions	43%	57%
Reread a story to child	71%	29%
Encourage the child read along	62%	38%

frequently throughout the story to point out objects, letters, and pictures.

Table 5 reported the help that caregivers have offered their children. All but one parent indicated that they have taught their child the ABC's. All of the parents indicated that they have purchased or borrowed books and magazines for their child. Most parents indicated that they have prepared a library corner in their child's room. Most parents also reported that they have helped their child sound out words and have taught them the sounds of letters.

Table 6 details the activities that children observe their parents participating in at home. The majority of families reported that their child can observe their

Table 5

Learning Activities that Parents Involve their Children  
in at Home

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<u>Activity</u>	<u>Yes</u>	<u>No</u>
Taught child ABC's	95%	5%
Library in child's room	86%	14%
Written labels on objects	5%	95%
Rules about television	71%	29%
Purchased books/magazines	100%	0%
Helped child sound out words	91%	9%
Taught child names of letters	95%	5%
Taught child sounds of letters	91%	9%
Used flash cards or workbooks	67%	33%

---

writing out lists, writing notes, using a computer, writing checks, and reading newspapers, books, and magazines. Also, no less than 16 (76%) parents reported that their child has free access to paper, pencils, markers, pens, books, magazines, newspapers, computers, and letters.

When asked their attitude toward learning to read and given three choices, 13 (62%) parents reported, "I believe it's best to take an active role and set aside time to teach children about letter names and sounds,

Table 6

Activities that Children May Observe Parents Doing in  
Home

---

<u>Activity</u>	<u>Yes</u>	<u>No</u>
Writing out lists	95%	5%
Writing notes, letters, papers	100%	0%
Typing letters or papers	52%	48%
Using a computer	81%	19%
Writing checks to pay bills	91%	9%
Working crossword puzzles	57%	43%
Reading a newspaper	95%	5%
Reading a magazine	86%	14%
Reading a book	81%	19%
Reading work-related materials	76%	24%

---

read to them, and to purchase school-like workbooks." The remaining parents indicated, "I believe my child will learn to read when she/he gets to school. However, I want to help them become aware of written language without directly teaching her/him. I will, therefore, read to them, encourage them to use print by providing them paper and writing instruments." None of the parents selected the third choice, "I don't worry about it. I believe my child will learn to read when she/he gets to

school. So, I will simply read to her/him and not try to teach them to read."

A Pearson-r correlation was conducted to assess the relationship between the three phonemic awareness tests and the total score. There were significant correlations, as expected, between the three phonemic awareness tests (Rhyming, Counting Syllables, and Onset Fluency) and the Total Phonemic Awareness score (see Table 7). In addition, there was a significant correlation between the Rhyming and Counting Syllables activities. Even though the Onset Fluency test had the strongest correlation of the three tests with the Total test score, we should limit our interpretation of this result. The reason behind this limitation is that the Onset Fluency test has a total possible score of 16 points. The Rhyming test and Counting Syllables test have a total possible score of only 5 points and most participants scored less than 3 points on these tests. Therefore, a high correlation between the Total test score and Onset Fluency would be expected.

Further analyses were planned for the current study. However, the restricted range of responses from the interview prevented further analyses. The further analyses included correlations between the children's phonemic awareness level and the activities that took place in the home environment. The researcher had hoped



Table 7

Intercorrelations Between Phonemic Awareness Tests

Test	Total	Rhyming	Syllable	Fluency
Total	--	.61**	.61**	.94**
Rhyming		--	.54*	.38
Syllable			--	.33
Fluency				--

---

\* $p < .05$ .    \*\* $p < .01$ .

to see if there was a relationship between certain reading activities and the children's phonemic awareness level.

## Discussion

Overall, the reported activities that took place in the homes of the current participants were typical of middle SES families that were discussed in the reviewed studies. The majority of the families reported that they practiced home activities that would facilitate the development of phonemic awareness. Most parents reported that they read to their children on a daily basis, stopped frequently to ask questions, pointed out pictures, objects, and letters, and provided access to books and other materials in the home. The families reported more reading, more books, and more literacy activities than the low SES families in the studies discussed earlier (Chaney, 1998; Epstein, 1994; Nespeca, 1995; Raz & Bryant, 1990; Smith & Dixon, 1995). However, the majority of the children fell within the serious range on the phonemic awareness tests of Rhyming and Counting Syllables. It would be expected that with all the home activities the parents reported doing with their children, the phonemic awareness levels would have been higher for more of the children.

The question raised by the current research results pertains to why the children scored low on the phonemic awareness tests after being involved in so many reading activities in the home. It is possible that the children were not learning the sounds of letters or words while they were participating in the many home activities. Thus, there may be a qualitative difference in how the home activities were carried out by the parents in this sample. A second possibility is that parents may have given socially acceptable answers to questions during the interview. Parents may have reported more involvement with their children than had actually occurred in the home. A third possibility is that the phonemic awareness assessment tools used in this study may not have been developmentally appropriate for 4-year-old children. Raw score totals of five were the maximum scores possible for two of the tests with most children scoring two points or less. Thus, the tests may not have been sensitive enough to detect early phonemic awareness abilities.

There was one child who scored higher on the Counting Syllables and Onset Fluency tests than the other children. However, this child scored below average on the Rhyming test. Overall, this child scored several points higher than all the other children in the current sample. This child's greatest strength, that no other

child had, was his ability to tell the beginning sound of a picture on the Onset Fluency test. The activities that reportedly took place in the home environment were characteristic of middle SES families. No specific activity or practice at home was outstanding enough to account for the child's high phonemic awareness level.

On the Counting Syllables test, 38% of the children earned a score of 3 or above. The least amount of children (5%) earned a score of 3 or above on the Rhyming test. From these scores, it is obvious that the children had the most difficulty with rhyming. When looking at the scores on Onset Fluency, one may think that this task was the easiest one for the children. However, the children had more opportunity to achieve a higher possible score.

When comparing the reading activities in the current study with data found by Smith and Dixon (1995), there was a difference between the two. Smith and Dixon (1995) found that almost 74% of low SES parents reported reading to their children no more than once per week. The current study found 62% of the parents read to their children daily. The remaining 38% of the parents reported that they read to their child on a weekly basis. Smith and Dixon (1995) also found that the majority of the low SES families read 0 to 10 minutes when they did

read to their children. The current study found that 30% of the parents reported to spending 30 minutes or longer when reading to their child. Only 5% of the parents reported that they read 1-10 minutes to their child. These differences may have been attributable to the interview format (e.g., phone vs. face-to-face) or because the parents in this sample wanted to give socially acceptable answers.

### Limitations

There were several areas that may add caution to the results of this study. First, having only 21 subjects limit the data analysis and generalizability of the results. Therefore, the results from the current study may not reflect an accurate representation of the low SES population. Obviously, a greater number of subjects would add to the interpretation of the results. Second, the study sample was extremely narrow in only containing Caucasian children. For future studies stratifying the sample may be beneficial.

A third limitation was that there was no variability in the home activities reported by the parents. This lack of variability made it difficult to predict which, if any, activities increased phonemic awareness. This lack of variability may have been attributed to the absence of a middle SES group. A middle SES group of

children would have been beneficial in comparing phonemic awareness levels and activities that take place in the home.

A fourth limitation may be related to the nine children (43%) who were receiving speech services. Having speech difficulties may account for lower abilities in hearing sounds that are necessary for rhyming tasks or telling the sounds of letters. Speech difficulties may inhibit a child from obtaining the appropriate level of phonemic awareness.

A fifth limitation was that the researcher served as both interviewer and data collector in the current study. Even though the researcher's training was appropriate, the possibility of bias was present. Also, the parents may have been influenced by the researcher to give socially appropriate answers.

A sixth limitation surrounded the interview format. The interview questions did not target actual phonemic awareness activities. For example, some questions dealt with the seating arrangement of the child during reading activities instead of rhyming activities. Therefore, it was not possible to correlate what reading activities influenced phonemic awareness.

#### Future Implications

Using an interview format alone to assess the home environment may not be the best method. It may be beneficial to add another method, such as home visits, to assess the home environment. Answers given by parents may be misleading or be given because they are socially acceptable. In the future, researchers may wish to include another measure of the home environment.

Also, future writers may consider adding another phonemic awareness test to the three administered in this study to give more detail on a child's actual phonemic awareness level. For example, looking at the ability to segment words or other phonemic manipulation activities may add more detail. The tests used in the current study may have been developmentally inappropriate or insensitive to small differences in abilities. On the rhyming test, the children may not have understood how to give their answer.

As described earlier, speech difficulties may inhibit phonemic awareness. Therefore, future investigators may wish to compare the phonemic awareness levels of children with communication disorders to children without any disorder.

Even though the present study is limited in many ways, it is useful for finding preliminary information when conducting future research.

## References

- Adams, M. J. (1990). Beginning to read: Thinking and learning about print. Cambridge, MA: MIT Press.
- Adams, M. J., Foorman, B. R., Lundbert, I., & Beeler, T. (1998). The nature and importance of phonemic awareness. Phonemic awareness in your children. Baltimore: Brooks.
- Ball, E. W., & Blachman, B. A. (1991). Does phoneme awareness training in kindergarten make a difference in early word recognition and developmental spelling? Reading Research Quarterly, 26, 49-66.
- Blevins, W. (1997). Phonemic awareness activities for early reading success. New York: Scholastic.
- Bradbury, K. (2001). Improving Head Start children's emergent literacy and phonemic awareness through parent training. Unpublished Specialist's thesis, Western Kentucky University, Bowling Green, KY.
- Chaney, C. (1994). Language development, metalinguistic awareness, and emergent literacy skills of 3-year-old children in relation to social class. Applied Psycholinguistics, 15, 371-394.



Chaney, C. (1998). Preschool language and metalinguistic skills are links to reading success. Applied Psycholinguistics, 19, 433-336.

Dunn, L., & Dunn, L. (1981). Peabody Picture Vocabulary Test - Revised. Circle Pines, MN: American Guidance Service.

Durica, K. M. (1998). A "sound" foundation for reading: The importance of phonemic awareness. Colorado Reading Council Journal, 11-14.

Elkonin, D. B. (1963). The psychology of mastering the elements of reading. In B. Simon & J. Simon (Eds.) Educational Psychology in the USSR (pp. 165-179). London, England: Routledge & Kegan Paul.

Elkonin, D. B. (1973). U.S.S.R. In J. Downing (Ed.) Comparative reading (pp. 551-579). New York: MacMillan.

Epstein, J. N. (1995). Accelerating the literacy development of disadvantaged preschool children: An experimental evaluation of a Head Start emergent literacy curriculum (Doctoral dissertation, State University of New York at Stony Brook).

Hakes, D. (1982). The development of metalinguistic abilities: What develops? In S. Kuczaj (Ed.), Language development: Vol. 2. Language thought and culture (pp.163-210). Hillside, NJ: Erlbaum.

Jastak, S., & Wilkinson, G. S. (1984). Wide Range Achievement Test - Revised. Wilmington, DE: Jastak Associates, Inc.

Jerger, M. A. (1996). Phoneme awareness and the role of the educator. Intervention in School and Clinic, 32(1), 5-13.

Kaminski, R. A., & Good, R. H. (1998). Assessing early literacy skills in a problem-solving model: Dynamic indicators of basic early literacy skills. In M. R. Shinn (Ed.), Advanced applications of CBM (pp.113-142). New York, NY: Guilford Press

Lesiak, J. L. (1997). Research based answers to questions about emergent literacy in kindergarten. Psychology in the Schools, 34(2), 143-160.

MacDonald, G. W., & Cornwall, A. (1995). The relationship between phonological awareness and reading and spelling achievement eleven years later. Journal of Learning Disabilities, 28(8), 523-527.

McCormick, C. E., & Mason, J. M. (1986). Intervention procedures for increasing preschool children's interest and in and knowledge about reading. In Teale, W. H., & Sulzby, E. Emergent literacy: Writing and reading (pp. 90-115). Norwood, NJ: Ablex.

Mercer, C. D., & Mercer, A. R. (2001). Teaching students with learning problems (6<sup>th</sup> ed). Upper Saddle River, NJ: Merrill Prentice Hall.

Nespeca, S. M. (1995). Parental involvement in emergent literacy skills of urban Head Start children. Early Child Development & Care, 111, 153-180.

Ninio, A. (1980). Picture book reading in mother-infant dyads belonging to two subgroups in Israel. Child Development, 51, 587-590.

Raz, I. S., & Bryant, P. (1990). Social background, phonological awareness and children's reading. British Journal of Developmental Psychology, 8, 209-225.

Rosner, J., & Simon, D. P. (1971). The Auditory Analysis Test: Journal of Learning Disabilities, 4, 384-392.

Scarborough, H. S., Dobrich, W., & Hager, P. (1991). Preschool literacy experience and later reading achievement. Journal of Learning Disabilities, 24(8), 508-511.

Smith, S. S., & Dixon, R. G. (1995). Literacy concepts of low- and middle-class four-year-olds entering preschool. Journal of Educational Research, 88(4), 243-258.

Snider, V. E. (1995). A primer on phonemic awareness: What it is, why it's important, and how to teach it. School Psychology Review, 24(3), 443-455.

Snider, V. E. (1997). The relationship between phonemic awareness and later reading achievement. Journal of Educational Research, 90(4), 203-211.

Snow, C. E. (1983). Literacy and language: Relationships during the preschool years. Harvard Educational Review, 53, 165-189.

Spector, J. E. (1995). Phonemic awareness training: Application of principles of direct instruction. Reading & Writing Quarterly: Overcoming Learning Difficulties, 11, 37-51.

Stanovich, K. E. (1986). Matthew effects in reading: Some consequences of individual differences in reading. Reading Research Quarterly, 21, 360-407.

Teale, W., & Sulzby, E. (1989). Emergent literacy: New perspectives. In S. Strickland & L. Morrow (Eds.), Emerging literacy: Young children learn to read and write (pp. 1-15). Newark, DE: International Reading Association.

Torgesen, J. K., & Bryant, B. R. (1994). Test of Phonological Awareness. Austin, TX: PRO-ED.

Warren-Leubecker, A., & Carter, B. (1988). Reading and growth in metalinguistic awareness: Relations to socioeconomic status and reading readiness skills. Child Development, 39, 728-742.

Whitehurst, G. J., Epstein, A. L., Angell, A. L., Payne, A.C., Crone, D. A., & Fischel, J. E. (1994). Outcomes of an emergent literacy intervention in Head Start. Journal of Educational Psychology, 86(4), 542-555.

Whitehurst, G. J., & Lonigan, C. J. (1998). Child development and emergent literacy. Child Development, 69(3), 848-872.

Wiederhold, J. L., & Bryant, B. R. (1992). Gray Oral Reading Tests. Austin, TX: ProEd.

Woodcock, R. W. (1987). Woodcock Reading Mastery Tests - Revised. Circle Pines, MN: American Guidance Service.

Yopp, H. K., & Yopp, R. H. (2000). Supporting phonemic awareness development in the classroom. Reading Teacher, 51(2), 130-144.

Zhurova, L. E. (1963). The development of analysis of words into their sounds by preschool children. Soviet Psychology and Psychiatry, 72, 17-27.

## Appendix A

### Interview Format to Assess Home Environment

## INTERVIEW FORMAT TO ASSESS HOME ENVIRONMENT

Person completing the questionnaire: \_\_\_\_\_mother \_\_\_\_\_father \_\_\_\_\_grandparent  
\_\_\_\_\_other

Your child's name: \_\_\_\_\_

Name of Preschool: \_\_\_\_\_

- How often do you or someone else read to your child or look through books together:  
\_\_\_\_\_Daily \_\_\_\_\_Weekly \_\_\_\_\_Occasionally \_\_\_\_\_Seldom \_\_\_\_\_Never  
(2-3times/month) (once/month)
- When your child is read to, how long does the experience last?  
• \_\_\_\_\_1-10 minutes \_\_\_\_\_11-20 minutes \_\_\_\_\_21-30 minutes \_\_\_\_\_longer
- Your child typically looks through books and other printed materials:  
\_\_\_\_\_Daily \_\_\_\_\_Weekly \_\_\_\_\_Occasionally \_\_\_\_\_Seldom \_\_\_\_\_Never  
(2-3times/month) (once/month)
- When your child looks through books and other printed materials, she/he usually spends:  
\_\_\_\_\_1-10 minutes \_\_\_\_\_11-20 minutes \_\_\_\_\_21-30 minutes \_\_\_\_\_longer
- Tell me how you and your child sit when you read or look through a book:  
\_\_\_\_\_child usually sits beside them so they can see the story  
\_\_\_\_\_child usually sits across from them so they can hear the story  
\_\_\_\_\_other, please explain
- Tell me who holds the book when you and your child read:  
\_\_\_\_\_child usually holds the book and turns the pages  
\_\_\_\_\_You (or someone) hold the book and turn the pages  
\_\_\_\_\_other, please explain
- Tell me who chooses the reading material at reading time:  
\_\_\_\_\_child usually selects the book or story  
\_\_\_\_\_You (or someone) usually select the book or story  
\_\_\_\_\_other, please explain
- When you or someone else reads to your child, do you  
\_\_\_\_\_stop frequently during the story to ask questions about the story  
\_\_\_\_\_keep the pace moving and read the story without many interruptions  
\_\_\_\_\_other, please explain

- From the experiences listed below, mark only the items that are likely to occur when you read to your child:
  - ✕ Yes/No. I frequently stop reading and point out objects for the child to identify in the pictures
  - ✕ Yes/No. I frequently stop reading and point out letters in the print
  - ✕ Yes/No. I frequently stop reading and point out pictures that illustrate what was told in the story
  - ✕ Yes/No. I frequently read the entire story as the child listens without many interruptions
  - ✕ Yes/No. I frequently reread a story or book previously read to the child
  - ✕ Yes/No. I frequently encourage the child to read with me, when the book uses repeated phrases or familiar rhymes
  
- Where can reading materials, such as books, magazines, and newspaper, (both adult and child related), be found in your home?
 

\_\_\_\_\_ Child's bedroom    \_\_\_\_\_ living room    \_\_\_\_\_ bathroom    \_\_\_\_\_ parent's room  
 \_\_\_\_\_ kitchen    \_\_\_\_\_ none of the rooms
  
- From the items listed below, select only the statements in which this type of help has been offered to your child at home (NOT IN SCHOOL):
  - ✕ Yes/No. taught child the ABC's
  - ✕ Yes/No. prepared a library corner in child's room
  - ✕ Yes/No. placed written labels on objects around the house
  - ✕ Yes/No. enforced rules about selecting/limiting TV viewing
  - ✕ Yes/No. purchased or borrowed books or magazines for your child
  - ✕ Yes/No. helped child sound out words
  - ✕ Yes/No. taught child the names of some letters
  - ✕ Yes/No. taught child the sounds of some letters
  - ✕ Yes/No. used flash cards or workbooks to teach letter names or sounds
  
- Select only the items that your child is likely to observe you doing outside of school during any typical week:
  - ✕ Yes/No. writing out lists
  - ✕ Yes/No. writing notes or letters or papers
  - ✕ Yes/No. typing letters or papers
  - ✕ Yes/No. using a computer
  - ✕ Yes/No. writing checks to pay bills
  - ✕ Yes/No. working crossword puzzles
  - ✕ Yes/No. reading a newspaper
  - ✕ Yes/No. reading a magazine
  - ✕ Yes/No. reading a book
  - ✕ Yes/No. reading work-related materials



- Select only the items that your child has free access to anytime in your house
 

Yes/No. paper	Yes/No. newspapers
Yes/No. pencils	Yes/No. typewriter
Yes/No. markers	Yes/No. stationery
Yes/No. pens	Yes/No. computer
Yes/No. books	Yes/No. letters (plastic, cardboard, etc.)
Yes/No. magazines	Yes/No. comics
- Select the one that best describes your feeling about your children learning to read:

\_\_\_\_\_ I don't worry about it. I believe my child will learn to read she/he gets to school. So, I will simply read to her/him and not try to teach them to read.

\_\_\_\_\_ I believe it's best to take an active role, and set aside time to teach children about their letter names and sounds, read to them, and purchase school-type workbooks.

\_\_\_\_\_ I believe my child will learn to read when she/he gets to school. However, I want to help them become aware of written language without directly teaching her/him. I will, therefore, read to them, encourage them to use print by providing them paper and writing instruments.

\_\_\_\_\_ Other, please explain.

- I believe that reading to children
  - \_\_\_\_\_ will help them learn to read
  - \_\_\_\_\_ is not likely to help them learn to read
  - \_\_\_\_\_ other, please explain

Questionnaire adapted from: Smith, S. S., & Dixon, R. G. (1995). Literacy concepts of low-and middle-class four-year-olds entering preschool. The Journal of Educational Research, 88(4), 243-253.

Appendix B

Letter from Human Subjects Review Committee

Permission Letters from Trimble and Bullitt County

WESTERN KENTUCKY UNIVERSITY  
*Human Subjects Review Board*  
Office of Sponsored Programs  
104 Foundation Building  
502-745-4652; Fax 502-745-4211  
E-mail: Phillip.Myers@Wku.Edu

In future correspondence please refer to HS0031, December 10, 1999

Anna Alexander  
P.O. Box 202  
Sweden, KY 42285

Dear Anna:

1. Your research project "Phonemic Awareness in Preschool Children in Relation to Social Class," has undergone review by the Western Kentucky University IRB for human subjects of research and it has been determined that risks to subjects are: (1) minimized and reasonable; and that (2) research procedures are consistent with a sound research design and do not expose the subjects to unnecessary risk. Reviewers determined that: (1) benefits to subjects are considered along with the importance of the topic and that outcomes are reasonable; (2) selection of subjects is equitable; and (3) the purposes of the research and the research setting is amenable to subjects' welfare and producing desired outcomes; that indications of coercion or prejudice are absent, and that participation is clearly voluntary.

2. In addition, the IRB found that: (1) informed consent will be sought and documented from each prospective subject. (2) Provision is made for collecting, using and storing data in a manner that protects the safety and privacy of the subjects and the confidentiality of the data. (3) Appropriate safeguards are included to protect the rights and welfare of the subjects. Please store all data securely at an on campus location for a minimum of three years after the project is completed.

3. Your research therefore meets the criteria of Full Board Review and is approved subject to receipt of signed articles of agreement with head start programs participating; and the letter to the parents must be made more reader friendly. Please note that the institution is not responsible for any actions regarding this protocol before approval. Copies of your request for human subjects review, your application, and this approval, are maintained in the Office Sponsored Programs at the above address. Please report any changes to this approved protocol to this office. A Continuing Review protocol will be sent to you in the future to determine the status of the project.

Kindest regards.

Sincerely,



Phillip E. Myers, Ph.D.  
Director, Office of Sponsored Programs and  
Human Subjects Coordinator

c: Human Subjects File0031

Kelli Bradbury  
178 J Wilson Road  
Auburn, KY 42206

Dr. Carl Myers, Department of Psychology, WKU

HSApprovalAlexander0031

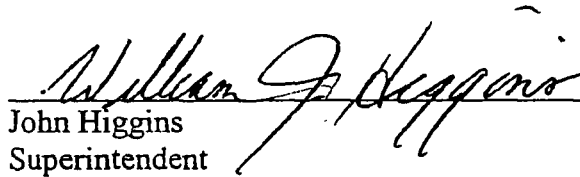
Trimble County Public Schools  
P. O. Box 275  
68 Wentworth Avenue  
Bedford, KY 40006

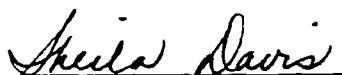
To whom it may concern:


The specialist project concerning phonemic awareness and Head Start children has been discussed with Anna Hayes, School Psychologist Intern and we are interested in participating in this study. We understand that this project is through Western Kentucky University and has been approved by the Human Subjects Committee. We give our permission for Anna Hayes to work with our children during the 2001 school year.

If you have any questions, please contact Sheila Davis at 502-255-3201.

Sincerely,

  
John Higgins  
Superintendent

  
Sheila Davis  
Director of Head Start

  
Sandra Kinman  
Program Manager

5-11-01

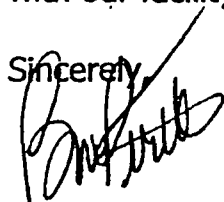
Bullitt County Schools  
1040 HWY 44 East  
Shepherdsville, KY 40165

March 7, 2001

To whom it may concern:

I have discussed the specialist project targeting Phonemic Awareness with Head Start Children with the school psychologist and have agreed to partake in the project. I give Anna Hayes and Western Kentucky Project permission to work with our facility. If you have any questions, please contact me at 957-4795.

Sincerely,

A handwritten signature in black ink, appearing to read 'Brenda Pirtle', written over the word 'Sincerely,'.

Brenda Pirtle  
Principal

## Appendix C

Permission Letter to Parents with Attachment

May 7, 2001

\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*

Mr. \*\*\*\*\*,

Hello, my name is Anna Hayes. I am completing my internship as a School Psychologist here in Bullitt County. I am working on a project, along with Dr. Carl Myers, School Psychology Professor at Western Kentucky University, about early reading ability and the activities that take place in the home. My project focuses on "Phonemic Awareness." Phonemic Awareness, simply put, is the understanding that words are made up of sounds. Research shows that children with high phonemic awareness levels are better readers later on. I hope that the results can help educators learn the activities that help our children become better readers.

I will be working in Ms. -----'s class. To assess the phonemic awareness levels of the children, a short activity will be given during class time. To learn more about the reading activities at home, a short parent interview will take place (approximately 15 minutes). The information gathered from the children's activity and the parent interview will be CONFIDENTIAL. Confidential means that no identifying information of the child or parent will be available to anyone because a code will be assigned to the child and parent.

I look forward to working with you and hope that you are willing to participate in this study. You do not have to participate in this project. Also, if you give your permission, you have the right to revoke that permission at any time.

If you have any questions, please call Ms. ----- at Brooks Elementary or Anna Hayes at 543-2271.

PLEASE SIGN AND RETURN THIS PERMISSION FORM TO MS. ----- AS SOON AS POSSIBLE.

\_\_\_\_\_ I agree for my child and I to participate in the project focusing on  
Phonemic Awareness.

---

Parent Signature

Name: \_\_\_\_\_

Child's name: \_\_\_\_\_

I look forward to working with you and your child and I hope that the results of this project lead to ideas that will help us, as parents and educators, teach the activities that will lead to successful readers.

The interview will take approximately 15 minutes, so if it will be more convenient to talk over the phone, please tell me. We can also schedule a time to meet in person.

For your convenience, I am offering a choice on how to conduct the parent interview. Please choose one of the following:

\_\_\_\_\_ I wish for the parent interview to take place over the telephone.

The best time to call me is at \_\_\_\_\_. Please call me at the number \_\_\_\_\_ or \_\_\_\_\_.

\_\_\_\_\_ I wish to schedule a time to meet in person to complete the parent interview.

The days that are best for me are \_\_\_\_\_.

The best time of day is \_\_\_\_\_.

\_\_\_\_\_ Other :

Please list your preference and to contact you.

PLEASE RETURN TO TRIMBLE COUNTY HEAD START.